

TABLE 11

Domestic R&D paid for by the company and others and performed by the company, by industry and company size: 2019

(Millions of U.S. dollars)

Industry	NAICS code	Company size (domestic employees)										
		All companies	10–19 ^a	20–49	50–99	100–249	250–499	500–999	1,000–4,999	5,000–9,999	10,000–24,999	25,000 or more
All industries	21–23, 31–33, 42–81	492,956	5,501	12,418	14,021	19,793	18,883	23,969	75,671	50,811	88,263	183,626
Manufacturing industries	31–33	285,674	2,301	5,455	7,925	11,137	10,478	14,808	45,577	35,737	59,274	92,981
Food	311	4,180	25	29	98	243	196	208	592	237	1,696	856
Beverage and tobacco products	312	1,082	15	18	16	10	116	26	21	213	101	546
Textile, apparel, and leather products	313–16	904	22	68	9	40	26	14	190	282	86	166
Wood products	321	186	0	4	5	22	5	13	45	85	7	0
Paper	322	1,064	2	12	6	29	24	10	76	119	341	446
Printing and related support activities	323	420	123	4	18	22	52	11	29	72	89	0
Petroleum and coal products	324	1,306	1	4	0 - 140	34	39	129	44	0 - 279	0 - 193	457 - 1,050
Chemicals	325	97,063	947	2,251	4,577	4,938	4,282	5,450	14,084	13,522	30,612	16,401
Basic chemicals	3251	2,360	0 - 48	103	42 - 56	141 - 161	103	149	1,146	263 - 349	308	14 - 21
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	1,172	0 - 48	14	26	98	32	64	170	0	717 - 772	0
Pesticide, fertilizer, and other agricultural chemicals	3253	1,822 - 1,846	21	22	33	39	26	25	512	695 - 783	362 - 476	0
Pharmaceuticals and medicines	3254	87,619	859	2,048	4,330	4,446	3,980	5,128	11,411	12,099	27,236	16,080
Soap, cleaning compound, and toilet preparation	3256	2,760	21	14	49	117	50	33	348	379	1,567	181
Paint, coating, adhesive, and other chemicals	3255, 3259	1,305 - 1,333	0 - 48	49	82 - 99	77 - 97	91	51	498	0	251 - 366	120 - 127
Plastics and rubber products	326	2,856	9	53	159	227	240	323	701	633	336	174
Nonmetallic mineral products	327	1,508	*	10	27	29	14	190	168	56	1,014	0
Primary metals	331	665	3	17	16	108	24	46	234	98	110	9
Fabricated metal products	332	2,885	136	230	294	544	352	420	666	154	88	0
Machinery	333	15,184	159	657	639	1,038	555	779	2,967	4,003	1,387	3,000
Agricultural implement	33311	1,921	4	48	13	49	20	82	270	141	0	1,294
Semiconductor machinery	333242	4,459	0 - 126	62	47	88	45	154	1,267	2,666 - 2,799	0	0
Engine, turbine, and power transmission equipment	3336	1,301	19	51	3	35	56	75	91	622	350	0
Other machinery	other 333	7,503	10 - 136	496	576	865	434	469	1,339	440 - 575	1,037	1,706
Computer and electronic products	334	86,729	275	1,362	1,113	1,859	2,481	3,781	15,071	10,043	13,974	36,769

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Communications equipment	3342	12,595	0 - 120	227	36 - 301	218	371	910	2,568	2,137	i 280 - 1,523	4,218 - 5,850	
Semiconductor and other electronic components	3344	35,183	i 0 - 120	538	274	1,016	1,537	1,508	5,643	5,634	i 9,717	9,192 - 9,320	i
Navigational, measuring, electromedical, and control instruments	3345	17,562	156	i 557	536	494	430	858	3,872	602	2,736	i 7,321	
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	3,342	76	i 132	235	129	131	534	1,186	0	918	i 0	
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	9,662	8	105	103	109	136	20	980	338	1,201	i 6,662	
Other measuring and controlling device	other 3345	4,558	72	320	198	256	162	303	1,705	264	617	659	
Other computer and electronic products	other 334	21,388	0 - 120	39	2 - 267	131	143	505	2,988	1,670	i 0 - 1,241	i 14,302 - 15,913	
Electrical equipment, appliances, and components	335	5,263	154	174	201	298	228	888	1,377	482	831	630	
Transportation equipment	336	45,375	252	i 140	250	889	1,003	1,651	5,223	3,804	4,205	27,959	
Motor vehicles, bodies, trailers, and parts	3361–63	24,117	12	14	0 - 84	392 - 513	838	1,057	3,390	2,653	i 1,967 - 2,451	13,106 - 13,796	
Aerospace products and parts	3364	18,358	i 234	i 85	143	342	109	401	1,610	572	1,748	13,114	i
Aircraft, aircraft engine, and aircraft parts	336411–13	16,891	i 15	63	73	255	107	401	571	544	1,748	13,114	i
Guided missile, space vehicle, and related parts	336414–15, 336419	1,467	220	i 22	69	87	2	0	1,039	27	0	0	
Military armored vehicle, tank, and tank component	336992	35	6	*	24	1	5	0	0	0	0	0	
Other transportation	other 336	2,865	0	41	0 - 85	34 - 155	52	193	223	579	7 - 491	1,048 - 1,738	
Furniture and related products	337	409	0	4	27	33	22	35	116	157	15	0	
Miscellaneous	339	18,596	177	417	339 - 479	775	819	834	3,972	1,505 - 1,785	4,196 - 4,390	4,980 - 5,562	
Medical equipment and supplies	3391	16,014	163	317	339	587	631	470	2,821	1,506	4,197	4,981	
Other miscellaneous manufacturing	3399	2,582	14	100	0 - 140	188	188	364	1,151	0 - 279	i 0 - 193	0 - 581	
Nonmanufacturing industries	21–23, 42–81	207,283	3,200	6,963	6,095	8,657	8,404	9,161	30,094	15,074	28,989	i 90,645	
Mining, quarrying, oil and gas extraction, and support activities	21	2,717	9	8	422	4	56	45	66	256	1,852	0	
Utilities	22	275	*	10	1	5	0	0 - 161	66	3	0 - 161	32 - 193	
Wholesale trade	42	1,191	99	543	135	231	132	i 23	19	i 0	11	i 0	

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Electronic shopping and electronic auctions	454111–12	3,131 - 15,818 i	0	0 - 170	7	0 - 510	43 - 349	0 - 1,264	0 - 559	0 - 946 i	0	0 - 13,832 i
Transportation and warehousing	48–49	9,890 i	2	0 - 170	0 - 186	0 - 510	62 i	3 - 680	1,175	0 - 676	7,974 i	0 - 676
Information	51	110,227	556	2,032	1,419	2,911	3,391	5,740	19,674	7,457	6,501	60,546
Publishing	511	33,019	206	854	400	806	655	695	7,979	2,688	2,246	16,490
Newspaper, periodical, book, and directory publishers	5111	61	4	1	6	4	44	2	0	0	0	0
Software publishers	5112	32,958	202	854	394	803	611	693	7,979	2,688	2,246	16,490
Telecommunications	517	3,733	35	60	135	114	169	87	68	59	23	2,982
Data processing, hosting, and related services	518	30,558	0 - 316	880	824	1,642	2,132	3,827	8,615	4,097	2,552 - 2,876	5,669
Other information	other 51	42,917	0 - 316	237	61	349	435	1,131	3,011	613	1,354 - 1,679	35,405
Finance and insurance	52	8,917	78	0 - 170	0 - 186	224	598	264	1,572	902	1,960	2,960 - 3,323
Real estate and rental and leasing	53	1,371	*	10	3	7	35	24	1,293	0	0	0
Lessors of nonfinancial intangible assets (except copyrighted works)	533	45	*	7	2 i	1	35	0	0	0	0	0
Other real estate and rental and leasing	other 53	1,326	0	2	1	6	0	24	1,293	0	0	0
Professional, scientific, and technical services	54	53,233	1,739	4,190	3,740	4,610	3,253	1,796	5,226	5,501	9,902 i	13,275
Architectural, engineering, and related services	5413	4,207	290	436	453	775	520	150	441	407 i	157	578
Computer systems design and related services	5415	21,046	452	1,845	1,202	1,148	811	765	2,639 i	288	3,672	8,226
Scientific research and development services	5417	21,669	914	1,538	1,497	2,054	1,381	700	1,517	3,366 i	5,985 i	2,716
Research and development in biotechnology	541711	6,457	293	439	462	318 i	230	134	0	0	1,866	2,716
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	14,446 i	616	1,082	982	1,702	1,144	566	1,240 i	2,996 i	4,119 i	0
Research and development in the social sciences and humanities	541720	766	6	17	54	34	8	0	277	370	0	0
Other professional, scientific, and technical services	other 54	6,312	83	372	587	633	540	182	629	1,441	88	1,755
Health care services	621–23	2,265	695	0 - 171	181	150	532	3 - 271	438	1	0 - 267	0 - 268

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Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	1,380 - 14,067		23		0 - 173		2 - 191		8 - 519		0 - 305		0 - 1,264	i	10 - 570		11 - 958	i	359 - 793		0 - 13,640	

* = amount < \$500,000; i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

NAICS = 2012 North American Industry Classification System.

^a The Business Enterprise Research and Development Survey does not include companies with fewer than 10 domestic employees.

Note(s):
Detail may not add to total because of rounding. Industry classification is based on the dominant business code for domestic R&D performance, where available. For companies that did not report business codes, the classification used for sampling was assigned. Beginning in survey year 2018, statistics are representative of companies located in the United States that performed or funded \$50,000 or more of R&D. This change has affected the comparability of these estimates with estimates published for years prior to 2018. An estimate range may be displayed in place of a single estimate to avoid disclosing operations of individual companies.

Source(s):
National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2019.